

What is claimed is:

- 1        1. A system for determining a reference baseline of regularly  
2        retrieved patient information for automated remote patient care, comprising:  
3            a medical device having a sensor for monitoring at least one physiological  
4        measure of an individual patient and regularly recording and storing measures sets  
5        comprising individual measures which each relate to patient information during  
6        an initial time period;  
7            a database collecting one or more patient care records, comprising  
8        organizing one or more patient care records, and storing the collected measures  
9        set into such a patient care record for the individual patient; and  
10          a server receiving the collected device measures set from the medical  
11        device, and processing the collected device measures set into a set of reference  
12        measures, each reference measure being representative of at least one of measured  
13        or derived patient information, and storing the reference measures set into the  
14        patient care record as data in a reference baseline indicating an initial patient  
15        status.
  
- 1        2. A system according to Claim 1, further comprising:  
2            the server repeatedly receiving one or more collected measures sets which  
3        are each recorded by a sensor which monitors at least one physiological measure  
4        of the individual patient, each such sensor monitoring a site within the individual  
5        patient unique from the site monitored by any other such sensor, and analyzing  
6        one or more of the site specific collected measures sets in the patient care record  
7        for each site within the individual patient relative to one or more other site  
8        specific collected measures sets stored in the database to determine a patient  
9        status indicator; and  
10          the database storing each collected measures set organized by specific site  
11        into the patient care record for the individual patient within the database.

1           3.     A system according to Claim 2, wherein the one or more site  
2 specific collected measures sets and the one or more other site specific collected  
3 measures sets both store measures collected from the same relative site.

1           4.     A system according to Claim 2, wherein the one or more site  
2 specific collected measures sets and the one or more other site specific collected  
3 measures sets both store measures collected from a different site.

1           5.     A system according to Claim 1, further comprising:  
2           a remote client recording a set of quality of life measures during the initial  
3 time period;

4           the server receiving the quality of life measures set from the remote client,  
5 and assimilating the collected quality of life measures set into the reference  
6 baseline data stored in the patient care record; and

7           the database storing the collected quality of life measures set into the  
8 patient care record for the individual patient; and

1           6.     A system according to Claim 1, further comprising:  
2           the medical device monitoring the individual patient while the individual  
3 patient is performing a prescribed set of timed physical stressors during the initial  
4 time period.

1           7.     A system according to Claim 1, further comprising:  
2           a programmer reprogramming at least one of pacing interventions and  
3 pacing modes of the medical device during the initial time period; and  
4           the medical device monitoring the individual patient subsequent to the  
5 reprogramming during the initial time period.

1           8.     A system according to Claim 1, further comprising:  
2           a feedback recorder recording feedback from the individual patient during  
3 the initial time period;

4                   the server receiving the recorded feedback from the remote client, and  
5                   assimilating the recorded feedback into the reference baseline data stored in the  
6                   patient care record; and

7                   the database storing the recorded feedback into the patient care record for  
8                   the individual patient.

9                   9.        A system according to Claim 8, wherein the feedback recorder  
10                  comprises at least one of an audio recorder, a digital camera, or a video camera.

1                   10.      A system according to Claim 1, further comprising:  
2                   a set of acceptance parameters stored within the database with each  
3                   acceptance parameter corresponding to the same type of patient information to  
4                   which at least one of the reference measures relates;  
5                   the server further comprising:  
6                   an evaluation module analyzing the reference measures set for  
7                   each patient care record against the acceptance parameters set; and  
8                   an acceptance module identifying each patient care record storing a  
9                   reference measures set having at least one reference measure substantially non-  
10                  conforming to the corresponding acceptance parameter.

1                   11.      A system according to Claim 1, the server further comprising:  
2                   an analysis module analyzing one or more collected device measures sets  
3                   in the patient care record for the individual patient relative to the reference  
4                   measures sets in the reference baseline to determine a patient status indicator.

1                   12.      A system according to Claim 11, the server further comprising:  
2                   the analysis module analyzing one or more of the collected device  
3                   measures sets in the patient care record for the individual patient relative to one or  
4                   more other collected device measures sets stored in the database to further  
5                   determine the patient status indicator.

1                   13.      A system according to Claim 1, wherein each of the set of  
2                   reference measures is selected from the group comprising patient activity score,

3 posture, atrial electrical activity, ventricular electrical activity, cardiovascular  
4 pressures, cardiac output, oxygenation, pulmonary measures, body temperature,  
5 PR interval, QRS measures, QT interval, ST-T wave measures, potassium [K<sup>+</sup>]  
6 level, sodium [Na<sup>+</sup>] level, glucose level, blood urea nitrogen and creatinine,  
7 acidity (pH) level, hematocrit, hormonal levels, cardiac injury chemical tests,  
8 myocardial blood flow, central nervous system injury chemical tests, central  
9 nervous system (CNS) blood flow, and time of day and combinations and  
10 derivatives thereof.

1           14. A method for determining a reference baseline of regularly  
2 retrieved patient information for automated remote patient care, comprising:  
3           regularly recording and storing measures sets comprising individual  
4 measures which each relate to patient information by a medical device having a  
5 sensor for monitoring at least one physiological measure of an individual patient  
6 during an initial time period;  
7           receiving the collected device measures set from the medical device;  
8           collecting one or more patient care records into a database, comprising:  
9           organizing one or more patient care records;  
10           storing the collected measures set into such a patient care record  
11 for the individual patient; and  
12           processing the collected device measures set into a set of reference  
13 measures, each reference measure being representative of at least one of measured  
14 or derived patient information, and storing the reference measures set into the  
15 patient care record as data in a reference baseline indicating an initial patient  
16 status.

1           15. A method according to Claim 14, further comprising:  
2           repeatedly receiving one or more collected measures sets which are each  
3 recorded by a sensor which monitors at least one physiological measure of the  
4 individual patient, each such sensor monitoring a site within the individual patient  
5 unique from the site monitored by any other such sensor;

6           storing each collected measures set organized by specific site into the  
7   patient care record for the individual patient within the database; and

8           analyzing one or more of the site specific collected measures sets in the  
9   patient care record for each site within the individual patient relative to one or  
10   more other site specific collected measures sets stored in the database to  
11   determine a patient status indicator.

1           16.    A method according to Claim 15, wherein the one or more site  
2   specific collected measures sets and the one or more other site specific collected  
3   measures sets both store measures collected from the same relative site.

1           17.    A method according to Claim 15, wherein the one or more site  
2   specific collected measures sets and the one or more other site specific collected  
3   measures sets both store measures collected from a different site.

1           18.    A method according to Claim 14, further comprising:  
2           receiving a set of quality of life measures recorded by the individual  
3   patient during the initial time period;  
4           storing the collected quality of life measures set into the patient care  
5   record for the individual patient within the database; and  
6           assimilating the collected quality of life measures set into the reference  
7   baseline data stored in the patient care record.

1           19.    A method according to Claim 14, further comprising:  
2           monitoring the individual patient using the medical device while the  
3   individual patient is performing a prescribed set of timed physical stressors during  
4   the initial time period.

1           20.    A method according to Claim 14, further comprising:  
2           reprogramming at least one of pacing interventions and pacing modes of  
3   the medical device during the initial time period; and  
4           monitoring the individual patient using the medical device subsequent to  
5   the reprogramming during the initial time period.

1        21. A method according to Claim 14, further comprising:  
2            receiving feedback recorded by the individual patient during the initial  
3            time period;  
4            storing the recorded feedback into the patient care record for the  
5            individual patient within the database; and  
6            assimilating the recorded feedback into the reference baseline data stored  
7            in the patient care record.

1        22. A method according to Claim 14, further comprising:  
2            defining a set of acceptance parameters with each acceptance parameter  
3            corresponding to the same type of patient information to which at least one of the  
4            reference measures relates;  
5            analyzing the reference measures set for each patient care record against  
6            the acceptance parameters set; and  
7            identifying each patient care record storing a reference measures set  
8            having at least one reference measure substantially non-conforming to the  
9            corresponding acceptance parameter.

1        23. A method according to Claim 14, further comprising:  
2            analyzing one or more collected device measures sets in the patient care  
3            record for the individual patient relative to the reference measures sets in the  
4            reference baseline to determine a patient status indicator.

1        24. A method according to Claim 23, further comprising:  
2            analyzing one or more of the collected device measures sets in the patient  
3            care record for the individual patient relative to one or more other collected  
4            device measures sets stored in the database to further determine the patient status  
5            indicator.

1        25. A method according to Claim 14, wherein each of the set of  
2            reference measures is selected from the group comprising patient activity score,  
3            posture, atrial electrical activity, ventricular electrical activity, cardiovascular

4 pressures, cardiac output, oxygenation, pulmonary measures, body temperature,  
5 PR interval, QRS measures, QT interval, ST-T wave measures, potassium [K<sup>+</sup>]  
6 level, sodium [Na<sup>+</sup>] level, glucose level, blood urea nitrogen and creatinine,  
7 acidity (pH) level, hematocrit, hormonal levels, cardiac injury chemical tests,  
8 myocardial blood flow, central nervous system injury chemical tests, central  
9 nervous system (CNS) blood flow, and time of day and combinations and  
10 derivatives thereof.

1           26.    A computer-readable storage medium holding code for  
2 determining a reference baseline of regularly retrieved patient information for  
3 automated remote patient care, comprising:

4           code for regularly recording and storing measures sets comprising  
5 individual measures which each relate to patient information by a medical device  
6 having a sensor for monitoring at least one physiological measure of an individual  
7 patient during an initial time period;

8           code for receiving the collected device measures set from the medical  
9 device;

10          code for collecting one or more patient care records into a database,  
11 comprising organizing one or more patient care records, and storing the collected  
12 measures set into such a patient care record for the individual patient; and

13          code for processing the collected device measures set into a set of  
14 reference measures, each reference measure being representative of at least one of  
15 measured or derived patient information, and storing the reference measures set  
16 into the patient care record as data in a reference baseline indicating an initial  
17 patient status.

1           27.    A storage medium according to Claim 26, further comprising:

2           code for repeatedly receiving one or more collected measures sets which  
3 are each recorded by a sensor which monitors at least one physiological measure  
4 of the individual patient, each such sensor monitoring a site within the individual  
5 patient unique from the site monitored by any other such sensor;

6           code for storing each collected measures set organized by specific site into  
7   the patient care record for the individual patient within the database; and  
8           code for analyzing one or more of the site specific collected measures sets  
9   in the patient care record for each site within the individual patient relative to one  
10   or more other site specific collected measures sets stored in the database to  
11   determine a patient status indicator.

1           28.    A storage medium according to Claim 26, further comprising:  
2           code for receiving a set of quality of life measures recorded by the  
3   individual patient during the initial time period;  
4           code for storing the collected quality of life measures set into the patient  
5   care record for the individual patient within the database; and  
6           code for assimilating the collected quality of life measures set into the  
7   reference baseline data stored in the patient care record.

1           29.    A storage medium according to Claim 26, further comprising:  
2           code for monitoring the individual patient using the medical device while  
3   the individual patient is performing a prescribed set of timed physical stressors  
4   during the initial time period.

1           30.    A storage medium according to Claim 26, further comprising:  
2           code for reprogramming at least one of pacing interventions and pacing  
3   modes of the medical device during the initial time period; and  
4           code for monitoring the individual patient using the medical device  
5   subsequent to the reprogramming during the initial time period.

1           31.    A storage medium according to Claim 26, further comprising:  
2           code for receiving feedback recorded by the individual patient during the  
3   initial time period;  
4           code for storing the recorded feedback into the patient care record for the  
5   individual patient within the database; and  
6           code for assimilating the recorded feedback into the reference baseline  
7   data stored in the patient care record.

1       32. A storage medium according to Claim 26, further comprising:  
2           code for defining a set of acceptance parameters with each acceptance  
3           parameter corresponding to the same type of patient information to which at least  
4           one of the reference measures relates;

5           code for analyzing the reference measures set for each patient care record  
6           against the acceptance parameters set; and

7           code for identifying each patient care record storing a reference measures  
8           set having at least one reference measure substantially non-conforming to the  
9           corresponding acceptance parameter.

1       33. A storage medium according to Claim 26, further comprising:

2           code for analyzing one or more collected device measures sets in the  
3           patient care record for the individual patient relative to the reference measures  
4           sets in the reference baseline to determine a patient status indicator.

1       34. A storage medium according to Claim 33, further comprising:

2           code for analyzing one or more of the collected device measures sets in  
3           the patient care record for the individual patient relative to one or more other  
4           collected device measures sets stored in the database to further determine the  
5           patient status indicator.